

Boadband infrared photometry of comet Hale-Bopp with ISOPHOT

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Comet Hale-Bopp has been observed five times with ISOPHOT, the photometer on board the Infrared Space Observatory (ISO), four times (March, April, September, and October 1996) before its perihelion passage at heliocentric distances of 4.92AU, 4.58AU, 2.93AU and 2.81AU, respectively and at 3.91AU on its way out (December 1997). Each time, multi-filter photometry covering the range between 3.6-175 micrometers with nine filters was performed in order to sample the spectral energy distribution of the comet. The analysis of comet observations with ISOPHOT had to consider (1) any offset of the comet's position from the center of the aperture, (2) the brightness distribution within the coma, (3) the zodiacal background, and (4) the spectral energy distribution of the comet's emission. The first two observations in Spring 1996 revealed a color temperature of 150K +/- 10K. For the second set of observations in Autumn 1996, the color temperature was 205K +/- 15K. Extensive spectral modelling of the observations has been used to infer the dust composition and size distribution. There is evidence that the dust composition and the size distributions varied between the observations.